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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/662,900 | 09/15/2000 | Takahiro Okamoto | Q58055 | 2387 |

7590      11/16/2005

Sughrue Mion Zinn MacPeak & Seas PLLC
2100 Pennsylvania Avenue NW
Washington, DC  20037-3213

| EXAMINER |
|---|
| NGUYEN, MADELEINE ANH VINH |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2626 | |

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on <u>02 September 2005</u>.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-3, 6-14* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *9-11* is/are allowed.

6)☒ Claim(s) *1-3,6-8 and 12-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

## DETAILED ACTION

### *Response to Arguments*

Applicant's arguments filed on September 02 2005 have been fully considered but they are not persuasive for the following reasons:

A. Applicant argues that the original C,M,Y,K signal (while external to the target printer) is still dependent on its associated printer, and therefore is also device-dependent and not device-independent.

Decker et al teaches a system, method and program for converting an externally defined colorant CMYK into an equivalent colorant (C'M'Y'K') associated with a given printer. The conversion includes 2 parts: the first conversion from CMYK to L*a*b* and the second part from L*a*b* to C'M'Y'K'. Decker teaches, "it is desirable to convert an externally defined CMYK to its corresponding L*a*b* values and to use these L*a*b* values to find an equivalent C'M'Y'K' combination for a given printer." (col. 6, lines 11-14). For instance, the steps of conversion are described as follows: a table is obtained from a standard that gives the L*a*b* values for combinations of C,M,Y,K for the standard or alternatively, if a table does not exist, a relationship going from CMYK of the standard to L*a*b* is established via measurement of generated color patches using inks specified by the standard (col. 8, lines 53-62) or "a look up table going from CMY of the printer to L*a*b* is established." (col. 9, lines 18-19). Decker further teaches that if the received data are in CMYK values, they will be converted to L*a*b* values (col. 14, lines 48-50). Thus, there is a conversion from dependent color space CMYK to independent color space L*a*b*. Decker further teaches the conversion from L*a*b* to CMYK

in Fig.3B and "a look up table can be generated from an externally defined CMYK four colorant combination having specified L\*a\*b\* values to CMYK of the printer." (col. 13, lines 14-16). Therefore, although Decker teaches the conversion from externally defined colorant CMYK into an equivalent colorant C'M'Y'K' associated with a given printer, the input colorant CMYK values are converted to L\*a\*b\* values and then the conversion from L\*a\*b\* values to C'M'Y'K'.

B. Applicant remarks that the K substitution only relates to representation of the substitution amount of a single dye, rather than multiple block dyes as described by claim 1.

As stated in the rejection, Decker teaches the conversion from CMY to CMYK wherein "For this conversion, it is assumed that the inks are a perfect dye such that a mixture in equal amounts of CMY will produce black or a perfect gray, i.e., a block dye." (col. 4, lines 55-58). Thus, any mixture having equal amounts of CMY will produce a block dye. The teaching in Decker also includes the case when CMY signals have equal values to produce a block dye. Decker further teaches the case of conversion for the block die and for non-block dies (col. 12, lines 1-7). Thus, for the case of block dye, the L\*a\*b\* image signals from the conversion from dependent color space CMYK to independent color space L\*a\*b\* represents densities with block dyes as claimed.

Therefore, the rejection of the claims is maintained.

## Claim Rejections - 35 USC § 103

1.     The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

2.      Claims 1- 3, 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Decker

et al (US Patent No. 6,137,594).

Concerning claim 6, Decker et al discloses an apparatus for converting device-dependent

image signals (RGB) into image signals (external CMYK) comprising an input converter for

converting device-dependent image (RGB) signals into image signals (CMYK).

Decker fails to directly teach that the external CMYK signals are converted to device-

independent signals such as L*a*b*. However, Decker teaches that "Any color combination

(e.g., CMYK) that is specified as having certain color values (e.g., L*a*b* values) which do not

take into consideration the characteristics of the colors of the printer that is to perform the

printing, is referred to herein as being externally defined (col. 5, line 48 – col. 6, line 10). Thus,

the external CMYK signals are independent of the characteristics of the colors of the printer

based on the values of L*a*b*. In addition, Decker teaches, "it is desirable to convert an

externally defined CMYK to its corresponding L*a*b* values and to use these L*a*b* values to

find an equivalent C'M'Y'K' combination for a given printer." (col. 6, lines 11-14). For

instance, the steps of conversion are described as follows: a table is obtained from a standard

that gives the L*a*b* values for combinations of C,M,Y,K for the standard or alternatively, if a

table does not exist, a relationship going from CMYK of the standard to L*a*b* is established

via measurement of generated color patches using inks specified by the standard (col. 8, lines 53-

62) or "a look up table going from CMY of the printer to L*a*b* is established." (col. 9, lines

18-19). Decker further teaches that if the received data are in CMYK values, they will be

converted to L*a*b* values (col. 14, lines 48-50). Thus, there is a conversion from dependent

color space CMYK to independent color space L*a*b*. Decker further teaches the conversion

from L*a*b* to CMYK in Fig.3B and "a look up table can be generated from an externally

defined CMYK four colorant combination having specified L*a*b* values to CMYK of the

printer." (col. 13, lines 14-16). Therefore, although Decker teaches the conversion from

externally defined colorant CMYK into an equivalent colorant C'M'Y'K' associated with a

given printer, the input colorant CMYK values are converted to L*a*b* values and then the

conversion from L*a*b* values to C'M'Y'K'. It would have been obvious to one skilled in the

art at the time the invention was made to consider the external CMYK signals are device-

independent signals when converted to L*a*b* signals since they are they are externally defined

and not dependent to the type of color printer (col. 6, lines 32-52).

Decker does not directly teach that the device-independent image signals representing

densities with block dyes. However, Decker teach that for an input file defined in CMY, the

conversion to C'M'Y'K' is assumed that the ink are a perfect dye such that a mixture in equal

amounts of CMY will produce black or a perfect gray, i.e., a block dye (col. 4, lines 55-58). For

the conversion to L*a*b* to CMYK, Decker teaches the step of creating CMY patches

measuring for L*a*b* values to get a CMY value for a given L*a*b* input value. Then the

above process for converting CMY to CMYK can be used wherein the well-known simple

scheme described above is based on the ideal dies known as black dies which yields perfect

black or grey (w/o hue) whenever equal amounts from C, M, and Y are overprinted over a given

area (col. 5, lines 10-38). Furthermore, Decker teaches the conversion with different variations

for block die and non-idea dies (col. 12, lines 1-7). It would have been obvious to one skilled in

the art at the time the invention was made to consider that the device-independent image signals

CMYK representing densities with block dies since Decker assume that for the conversion, the

inks are a perfect die such that a mixture in equal amounts of CMY will produce black or perfect

gray, i.e., a block dye which is well known in the prior art.

Concerning claim 7, Decker discloses an apparatus as discussed in claim 6 above.

Decker further teaches an output converter for converting the device-independent images signals

(externally defined CMYK signals) into device-dependent image signals (CMYK signals for

printer directly) for an output device (printer in Fig.4).

Concerning claim 8, Decker further teaches that the device-dependent image signals

comprise R, G, B signals or C, M, Y signals, and the device-independent image signals comprise

C, M, Y signals (col. 5, lines 10-47).

Claims 1-3 are method claims of apparatus claims 6-8. Claims 1-3 are rejected for the

same rationales set forth for claims 6-8 respectively.


3.      Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Decker et al

(US Patent No. 6,137,594) as applied to claims 1, 6, 7 above, and further in view of Decker et al

(US Patent No. 6,313,925).

Concerning claims 12-14, Decker et al (594) does not directly teach that the color signals

of the device-independent image signals representing densities with multiple colored block dyes.

Decker et al (925) teaches a conversion table for converting C,M,Y,K signal values in a CMYK

combination to $L*a*b*$ (col. 2-12; col. 34-59). Decker also refers to the block die for illustration

in carrying out maximum black substitution wherein ten percent of each of C,M and Y would be

removed and ten percent of black would be put back into the color combination (col. 7, lines 60-

67). Thus, for the block die, the L*a*b* values represent densities with multiple colored block

dyes of C,M,Y,K. It would have been obvious to one skilled in the art at the time the invention

was made to combine the teaching of Decker (925) to the conversion from CMYK to L*a*b* in

Decker (594) since both of them teach the same filed of endeavor of converting CMYK to

L*a*b* and from L*a*b* to C'M'Y'K'.


### *Allowable Subject Matter*

4.      The following is an Examiner's statement of reasons for the indication of allowable

subject matter:

Claims 9-11 are allowable.

The following is an Examiner's Statement of Reasons for Allowance:  Claims 9-11 are

allowable over the prior art of record because the Examiner found neither prior art cited in its

entirety, nor based on the prior art, found any motivation to combine any of the said prior art

which teaches an apparatus for converting device-dependent image signals into device-

independent image signals comprising a table selector for selecting one of a plurality of one-

dimensional conversion tables which is optimum for an input device which reads an image

subject with respective predetermined functions and input converter for converting the device-

dependent image signals processed by the selected one-dimensional conversion table into device-

independent image signals representing densities with block dyes.

Any comments considered necessary by applicant must be submitted no later than the

payment of the Issue Fee and, to avoid processing delays, should preferably accompany the Issue

Fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

## *Conclusion*

5.      **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
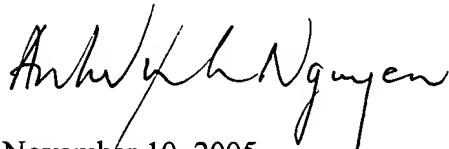
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6.      Any inquiry concerning this communication or earlier communications from the examiner should be directed to Madeleine AV Nguyen whose telephone number is 571 272-7466. The examiner can normally be reached on Monday, Tuesday, Thursday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly A. Williams can be reached on 571 272-7471. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Madeleine AV Nguyen
Primary Examiner
Art Unit 2626

November 10, 2005